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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/645,182 | 08/21/2003 | Toshikazu Hirota | 791_069 CON | 7053 |

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| EXAMINER | |
|---|---|
| DRODGE, JOSEPH W | |
| **ART UNIT** | **PAPER NUMBER** |
| 1723 | |

DATE MAILED: 12/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/645,182 | HIROTA ET AL. | |
| | Examiner | Art Unit | |
| | Joseph W. Drodge | 1723 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/429,140.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *0803*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

The disclosure is objected to because of the following informalities: Page 1 of the Specification should be amended at paragraph 1 by replacing "now allowed" with "now patent 6,656,432, issued 12/02/03.

Appropriate correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Swierkowski, of record in the parent application.

Although preamble language of claim 1 "for dispensing sequential, different sample solutions" is not accompanied by corresponding structural limitations, Swierkowski generally is drawn to dispensing of sequential sample arrays (Abstract and column 1, lines 35-41). Also disclosed are inlet ports 19, introduction holes 29 that lie at or below the plane of cavities 27, piezoelectric elements 44/39 "adjacent cavity walls that propel fluid by controlling the shape and volume of the cavities, the cavities having the claimed dimensions (column 5, lines 33-60 and column 6, lines 22-29), with the cavities also dimensioned to reduce tendencies of fluid to mix (column 3, lines 45-51).

Regarding dependent claims: for claim 2, see column 2, line 23 pertaining to cavity length; for claims 3, 4 and 6 see discussion of plural ports, channels and cavities

at column 4, line 65-column 5, line 19, thus forming plural units; for claim 5, plates 10 an d11 are joined at feature 35; for claims 7 and 8, plate formation is shown in the figures generally and taught at column 5, lines 41-46; for claim 9 see column 4, lines 59-60 for plural inlet ports; for claims 10, 11 and 12 plate structure of joined zirconium titanate or metal is discussed at column 4, lines 45-46 and 52; and for claim 4 fixing jigs are disclosed at column 8, lines 63-66 and column 9, lines 38-43.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Swierkowski in view of Takeuchi et al patent 5,475,279 also introduced in the parent application.

Claim 13 differs from Swierkowski in reciting the piezoelectric element being manufactured as a film of lead alloy. Takeuchi teaches such lead alloy and film manufacture at column 6, lines 55-66 and column 7, lines 30-35. It would have been obvious to one of ordinary skill in the art to have constructed the piezoelectric elements of the Swierkowski device to be of a lead alloy film, as taught by Takeuchi, to facilitate mass production techniques.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Barth et al patent 6,461,812 teaches dispensing of sequential different samples or different reagents forming samples using a device employing piezoelectric fluid movement enhancers (figure 4B and corresponding text may be germane to the instant claims). Doktycz et al patent 6,627,151 shows plural dispensing units of biological samples joined to a common manifold plate .

Any inquiry concerning this communication or other matters pertaining to prosecution should be directed to Examiner Joseph Drodge at (571) 272-1140 Monday-Friday between 8:30 and 4:45. The Fax number for the Examining Group is (703) 872-9306.

JWD

December 3, 2003

JOSEPH D RODGE
PRIMARY EXAMINER